



Dart Aerospace Ltd.
1270 Aberdeen St
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*Check
Revision*

C45-C
Job Sheet 191786



Part No: C45-C

Job Qty: 1 pcs

Part Name: Single Cage Assembly (C45 & C60 Hook)



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 3/8/19

Job Tracking No:

Due Date: 4/5/19 *buy 6*

Created By: Marie Lajeunesse

Type: SOLD

Description: *order 14357*

Note: C45-C rev.4 IPP REV:A 18.01.22 NEW ISSUE DD VERF:DP

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	External Load - 1	1 pcs	4/5/19	4/5/19	0.00	0.50	External Load - 1		<i>AP 2019/04/09</i> <i>MICHEL</i>
							External Load - 2		
							External Load - 3		
120	QC 5	1 pcs	4/5/19	4/5/19	0.00	0.00	QC 5 - 10		<i>DAC</i> <i>19</i> <i>9-05</i>
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 42		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
							QC 5 - 40		
140	Packaging 3-1 - Stock - B4B	1 pcs	4/5/19	4/5/19	0.00	0.00	Packaging 3 - 1 - B4B		
							Packaging 3 - 2 - B4B		
							Packaging 3 - 3 - B4B		
							Packaging 3 - 4 - B4B		
							Packaging 3 - 5 - B4B		
							Packaging 3 - 6 - B4B		
							Packaging 3 - 7 - B4B		
							Packaging 3 - 8 - B4B		
							Packaging 3 - 9 - B4B		
							Packaging 3 - 10 - B4B		



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Container No: S170974



Part: C45 - C

Job No: 191786

Serial No/Batch: S170974

Revision: 4

Inspector:

Exp Date:

Instructions:

Date: 04/09/19

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				Packaging 3 - 11 - B4B					
				Packaging 3 - 12 - B4B					
				Packaging 3 - 13 - B4B					
				Packaging 3 - 14 - B4B					
				Packaging 3 - 15 - B4B					
				Packaging 3 - 16 - B4B					
				Packaging 3 - 17 - B4B					
				Packaging 3 - 18 - B4B					
				Packaging 3 - 19 - B4B					
				Packaging 3 - 20 - B4B					
				Packaging 3 - 21 - B4B					
				Packaging 3 - 22 - B4B					
				Packaging 3 - 23 - B4B					
				Packaging 3 - 24 - B4B					
				Packaging 3 - 25 - B4B					
				Packaging 3 - 26 - B4B					
				Packaging 3 - 27 - B4B					
				Packaging 3 - 28 - B4B					
				Packaging 3 - 29 - B4B					
				Packaging 3 - 30 - B4B					
				Packaging 3 - 31 - B4B					
				Packaging 3 - 32 - B4B					
				Packaging 3 - 33 - B4B					
				Packaging 3 - 34 - B4B					
				Packaging 3 - 35 - B4B					
				Packaging 3 - 36 - B4B					
				160 QC 21 - SA	1 pcs	4/5/19	0.00 0.00	QC 21 - SA - 21	
								QC 21 - SA - 70	
								QC 21 - SA - 53	

DAS
70
9-89

Part Op 100 - (Small Fab)ASSEMBLE AS PER DWG ***HAND TIGHTEN ALL BOLTS, SPREAD COTTER PIN JUST ENOUGH
 Descriptions: SO THAT IT WILL NOT FALL OUT***
 120 - (QC5- Inspect part completeness to step on W/O)
 140 - (Identify as per dwg & Stock Location: _____)
 160 - QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
AN12H32	Bolt	1 pcs (1 ea)	100-External Load - 1	5097920
AN8-23A	Bolt	2 Ea (2 ea)	100-External Load - 1	5085037
C45-15-10	Ford Bumper	1 pcs (1 ea)	100-External Load - 1	5156425
C45-15-11	Nut, Cage Bumper	1 Ea (1 ea)	100-External Load - 1	5036837
C45-15-3	Lifting Bolt Castle Nut	1 pcs (1 ea)	100-External Load - 1	5036834
C45-15-6	Bushing, Lifting	1 pcs (1 ea)	100-External Load - 1	5067712
C45-15-7	Washer, Lifting Bolt	5 # pcs (4 ea)	100-External Load - 1	5113259
C45-18-7	Shim	4 pcs (4 ea)	100-External Load - 1	5054305
C45-19C	Weldment	1 pcs (1 ea)	100-External Load - 1	5166341
MS21044N8	Nut, Self-Lock .500-20,UNJF-3B	2 Ea (2 ea)	100-External Load - 1	5147505
MS24665-363	Cotter Pin	1 Ea (1 ea)	100-External Load - 1	5092509-1
NAS1149C0663R	Washer	1 Ea (1 ea)	100-External Load - 1	5076016-1
NAS1149F0863P	Washer	4 Ea (4 ea)	100-External Load - 1	5058169

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-External Load - 1	AN12H32	1	27	0
	AN8-23A	2	34	0
	C45-15-10	1	6	0
	C45-15-11	1	87	0
	C45-15-3	1	11	0
	C45-15-6	1	15	0
	C45-15-7	4	53	0
	C45-18-7	4	27	0
	C45-19C	1	0	0
	MS21044N8	2	60	0
	MS24665-363	1	89	0
	NAS1149C0663R	1	534	0
	NAS1149F0863P	4	770	0

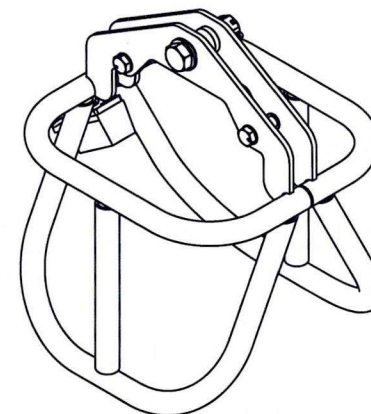
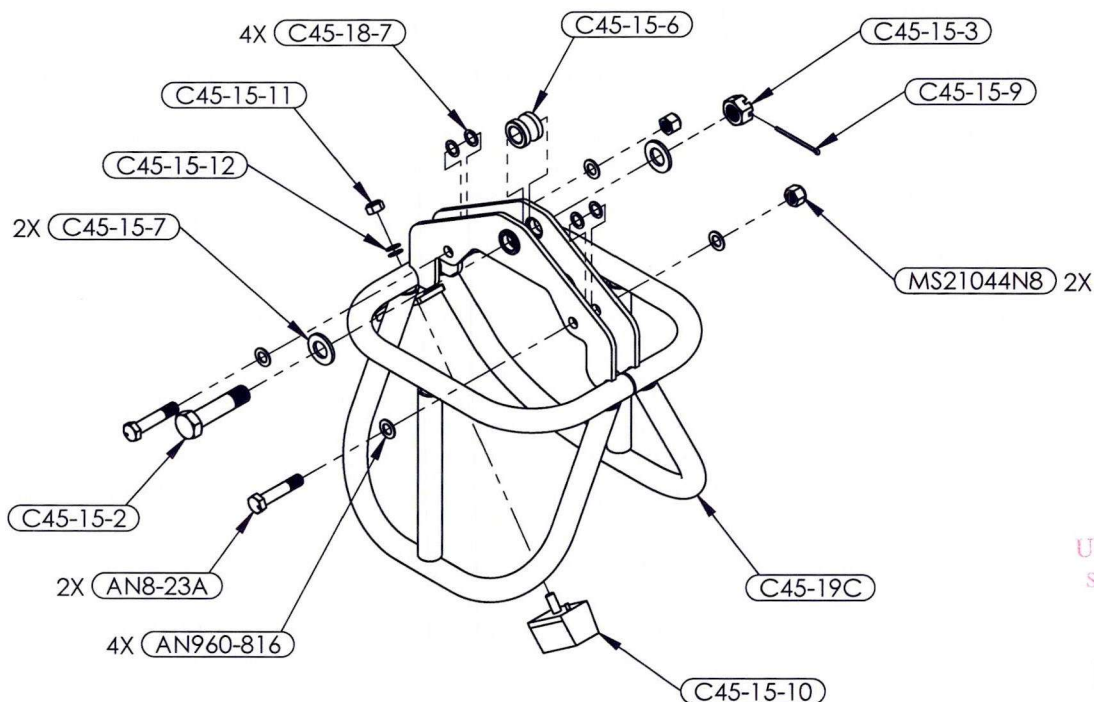
Part Specifications

Specifications could not be found.

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REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
3		AS DRAWN BY APICAL.	11/6/2012	JAG
4	15-0180	UPDATED TO NEW DRAFTING STANDARDS. CH'D P/N WAS C45-15-8 IS AN960-816. C45-15-4 DELETED, REPLACED WITH AN8-23A. C45-15-5 DELETED, REPLACED WITH MS21044N8. C45-18-7 ADDED TO BOM QTY 4.	7/22/2015	DPD
				JAG



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WITHOUT NOTICE
WORK ORDER
NO. 191786 MJS

190308

ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS
			C45-19C	1	WELDMENT		
			C45-15-2	1	LIFTING BOLT	STEEL	3/4-16 X 4-1/2, GRADE 8 (MCMaster-CARR #91257A879) MODIFIED
		B/O	C45-15-3	1	CASTLE NUT	STEEL	3/4-16 (MCMaster-CARR #95030A270)
		B/O	C45-15-7	2	LIFTING BOLT WASHER	STEEL	3/4 (MCMaster-CARR #98023A036)
		B/O	C45-15-9	1	COTTER PIN	S.S.	Ø1/8 X 2-1/2 (MCMaster-CARR #98401A481)
			C45-15-10	1	FORD BUMPER		(#E3TZ-4730-A) MODIFIED
		B/O	C45-15-11	1	CAGE BUMPER NUT	STEEL	M10, CLASS 8 (MCMaster-CARR #90576A118)
		B/O	C45-15-12	1	CAGE BUMPER WASHER	STEEL	3/8 (MCMaster-CARR #91074A131)
			C45-15-6	1	LIFTING BUSHING	4140/4142	
		B/O	C45-18-7	4	SHIM	STEEL	.025 X Ø.511 I.D. (MCMaster-CARR #3088A412)
		B/O	AN8-23A	2	BOLT	STEEL	1/2-20 X 1.47
		B/O	AN960-816	4	LIFTING BOLT WASHER	STEEL	Ø1/2
		B/O	MS21044N8	2	NUT	STEEL	1/2-20

			TITLE	
			C45 CAGE	
			DWG NO.	REV
			C45-C	4
			MATERIAL	
			UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
			.XXX ± .005 FRACTIONS ± 1/8	
			.XX ± .01 ANGLES ± 5°	
			.X ± .1	
			1. BREAK ALL SHARP EDGES .015 x 45°	
			OR .015R	
			2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
			SCALE 1:8	
			DATE 2/15/2002	
			SHEET 1 OF 1	

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor		
			QC / QA Coordinator		
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>191786</u>	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS			
Part No. <u>C45-C</u>		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐
NCR No. _____		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐
		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
		Large Fab ☐	Composite ☐	Supplier ☐	

Date : 2019/04/09

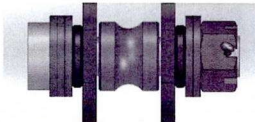
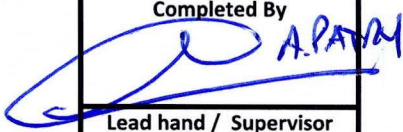
Step #:

QTY Effective :

MRB (QSI042) Approval

M. Lee

JUNE 27, 2018

Description Work Order Deviation - C45-15-2 McMaster#91257A879 modified bolt has been replaced with AN12H32 purchase bolt (no modification required) - Cotter Pin p/n C45-15-9 (1) has been replaced with MS24665-363 - Lock Washer P/N C45-15-12 (1) has been replaced with SS Flat Washer NAS1149C0663R - PER VM	Disposition - This deviation is acceptable. - The AN12 bolt is sufficiently strong for its intended application - No impact on fit, form or function. - The Cotter Pin must be changed in conjunction with the AN12H32 Bolt. - All fasteners must be in safety (1-3 threads exposed) use additional washers if necessary 	Completed By  Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval
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Root Cause Environment ☐ No Re-verification ☐ Design ☐ Operator ☐ Doc/Data ☐ Offset/Setup ☐ Equip/Tooling ☐ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☐ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LOA ☒ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					